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BAYLOR BUSINESS STUDIES

NEW RANDOM SAMPLING NUMBERS

BY

H. N. BROOM, Ph.D.

Founded 1845 at Independence
Under The Republic of Texas

THE SCHOOL OF BUSINESS
BAYLOR UNIVERSITY
WACO, TEXAS

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F O R E W O R D

This significant statistical study of NEW RANDOM SAMPLING NUMBERS by Dr. H. N. Broom initiates the new quarterly publication of the Baylor School of Business under the general title of BAYLOR BUSINESS STUDIES. These Studies, while giving evidence of and publicizing representative productive research of the faculty, are designed to present analytical studies of general public interest and import and also studies, such as this, which are believed to be of practical utility to business men.

Comments of readers on this and future issues will be welcomed.

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PREFACE

The present study was undertaken because the writer felt that there was a need for more random number tables. The conduct of random sampling from finite universes is greatly facilitated thereby, and the resulting samples carry a considerable assurance of their lack of bias from the method used.

This study was begun in September, 1949. In the obtaining of the numbers, in the preparation of some of the tally sheets, made in duplicate, and in checking the final copy, the writer acknowledges the assistance of his wife. Assistance in the making of the tally sheets was also rendered by three student assistants. All assistance is gratefully acknowledged. Responsibility for errors, if any, remains with the writer.

H. N. Broom

NEW RANDOM SAMPLING NUMBERS

I. Procedure Used in Obtaining the Numbers

Construction of a random number table requires a procedure for obtaining digits which is governed by chance factors. Such a table, itself, is a random sample from the universe composed of the ten digits, zero to nine inclusive, with unlimited re-use of the digits in the sample. This ten-digit universe is infinite because any one digit may be included in the sample any number of times, so long as chance places the digit in the sample each time.

In the present case, the selection procedure was predicated on the shuffling of cards. Three basic procedures were used, all depending on this as a randomizing device for the obtaining of each individual digit. The first method involved shuffling of the deck of cards three times, after which the cards were laid out for regular solitaire. When so laid out, the top card on each of the seven stacks of cards is exposed. These were recorded in sequence from left to right. In the event that picture cards were turned up, these were omitted. When the seventh stack was reached, it was turned over, and each card therein other than picture cards was recorded in sequence from top to bottom. For convenience, the digits so obtained were recorded in rows of six digits, six rows to each block. Every third non-picture card left in the hand of the player was also recorded in sequence from top to bottom of that group of cards.

The second method involved the shuffling of the cards three times, using two decks, with every fourth non-picture card recorded in sequence from top to bottom. Picture cards were again omitted. The recording was done as before in blocks of six rows of six digits each, with blocks recorded in sequence from left to right on the work-sheets.

The third method, like the others, began with the

shuffling of the cards three times, using two decks of cards. This time the cards were faced up one at a time, two at a time, three at a time, and four at a time, in that order. Thus, in every cycle of ten cards, digits were obtained from the first, third, sixth, and tenth cards. If picture cards turned up in this procedure, unlike the others, the first following card showing a digit was recorded instead. Digits were recorded in sequence, in the manner already outlined.

In each of these three procedures, the ace was recorded as one, two as two, and so forth, with the tens being used in lieu of zeros. It will be observed that use of cards in this way gave equal probabilities of obtaining each of the digits in the sampling of an effectively infinite universe composed of equal numbers of each of the ten digits.

These three procedures were used in rotation for the obtaining of the 30,240 digits given in the twenty pages of digits presented hereinafter.

II. Proof of Randomness of the Numbers

A sample is random if every universe member, prior to chance drawings of the sample members from the members of the universe, has an equal chance of getting into the sample. The procedure outlined above for the obtaining of the sample of 30,240 digits from the infinite universe made up of equal numbers of the ten basic digits conforms to this definition of randomness. The randomizing factor was the triple shuffling of the cards each time. The three systematic procedures, used in rotation, provided a basis for selections independent of the variable being sampled. Probabilities in advance of selections for the selection of each digit were obviously equal.

Nevertheless, as someone has said, no mechanical procedure for random sampling is necessarily free of bias, and so proof of the randomness of the results obtained from the procedures outlined must be procured.

In this study, three tests of the randomness of of the 30,240 digits obtained were undertaken, since the use of a random selection procedure does not guarantee randomness in the results. The first test imposed was this: That the expectation of equal frequencies of the digits, zero to nine, be realized approximately. The second test imposed was this: That the theoretical distribution of groups of six digits, as to group ranges, be realized approximately. In this test, horizontal groups of six digits were used exclusively. The third test imposed was this: That the theoretical frequencies of sums of six digits be realized approximately. In this test, vertical groups of six digits were used exclusively.

Thus, the 30,240 digits were tested for equal distribution over the ten basic digits, while the 5,040 groups of horizontally taken digits were tested for range and the 5,040 groups of vertically arranged digits were tested for the sums thereof. In each of the three tests, each of the twenty pages were tested individually first, then all twenty pages were tested as a whole. This is necessary because a set N might be random in domain R, while another set N might be random over domain S, yet their sum might fail of randomness over the domain R plus S, and vice-versa.

FIRST TEST

This test consisted of a comparison of the expected frequency distribution with the actual numbers of times the various digits appeared, using the Chi-square Test. The latter measures the concordance of expectation with actual. To get actual, a tally sheet of the actual frequencies of each digit was prepared for each page, using one class for each basic digit. The expectation, per page of 1,512 digits, for each of the ten classes was 151.2. Actual totals tallied for each class minus the expectation gives the class deviations. Chi-square is the sum of the quotients of the squared deviations divided by expectations.

The theoretical distribution of Chi-square has been worked out and tabulated. It differs with the number of degrees of freedom, which in such a comparison

is one less than the number of classes because the total for the page is fixed so that the last class frequency is fixed also once the others have been determined.

In an infinitely large sample, actual frequency per class would agree exactly with expectation, and Chi-square would be zero. Its probability would then be 1.00. Likewise the probability of securing a Chi-square infinitely large is zero. For intermediate values of Chi-square, it and its probability are functionally related, the function differing, as stated above, with the number of degrees of freedom.

Results, by pages, of this test were as follows:

Page	Chi-square	Probability
1	5.419	.796
2	17.683	.044
3	3.714	.927
4	6.625	.676
5	11.863	.224
6	3.568	.936
7	5.778	.761
8	11.320	.258
9	10.407	.322
10	13.940	.130
11	2.669	.975
12	10.367	.325
13	12.577	.186
14	3.714	.927
15	8.966	.446
16	5.354	.802
17	7.193	.618
18	3.753	.925
19	4.878	.841
20	5.276	.809

The test for the twenty pages combined resulted in a Chi-square of 0.312, whose probability is greater than .990.

The probabilities stated are the probabilities that the Chi-squares obtained, or more, would occur as a result of chance. Each such Chi-square was obtained for nine degrees of freedom in this case, and each meets the usual probability standard of .050 except that for page two. From the results therefore, one may safely conclude that all pages other than page two could have happened by chance. Page eleven yielded exceptional concordance of theoretical with actual, as did the whole set of twenty pages combined. This, however, is favorable, as it means that the test of equal distribution of frequencies on the ten digits is realized even more closely than for the other, purely random, results.

The discrepancy of actual from expectation on page two is so great that it would not be obtained by random sampling as much as five times in one hundred, and so the user of the random digit table is cautioned not to use this page for small samplings without expectation of some bias in the results.

It should be noted that each tally sheet on each test, including this one, was prepared in duplicate, duly compared, and discrepancies corrected prior to evaluation of the results; also, that each step in the calculations was double checked.

SECOND TEST

This test consisted of a comparison of the expected frequency distribution of the range of groups of six digits, taken across the rows, with the actual numbers of times the various ranges occurred, using the Chi-square Test. The possible ranges run from zero to nine, inclusive.

To get actual, the range of each horizontal group of six digits was computed, and tally sheets prepared for each page, as before. The expectations were computed by Dodd's formulas, with $k = 6$. Ranges from zero to three were lumped in one class since the individual range expectations therefor were so small as to possibly affect the Chi-square calculation adversely. For the resulting seven classes, there were

six degrees of freedom.

Results of this second test, by pages, were as follows:

Page	Chi-square	Probability
1	6.303	.399
2	3.538	.738
3	8.917	.183
4	3.488	.745
5	4.454	.618
6	6.451	.383
7	7.192	.304
8	12.014	.065
9	3.553	.736
10	7.910	.249
11	6.396	.389
12	1.196	.976
13	7.757	.260
14	4.798	.572
15	10.710	.098
16	6.944	.330
17	9.295	.165
18	11.264	.084
19	9.366	.161
20	6.473	.381

The test for the twenty pages combined resulted in a Chi-square of 50.123, whose probability is less than .010.

From these results, one may safely conclude that each page could easily be the result of a valid, random sampling procedure, although page twelve showed exceptional concordance of actual with theoretical and the last six probabilities constitute a somewhat suspicious run below the middle, or .500, probability. This means that small samplings requiring the use of a single page, or just a few pages, may be safely undertaken using these tables horizontally across the rows of digits.

The test of the twenty pages combined, as to group ranges, however, was distinctly unfavorable. The result could happen by chance, but the probability thereof is very small. Thus, it is recommended that large samplings requiring all twenty pages use the digits in vertical, rather than horizontal, sequence.

THIRD TEST

This test consisted of a comparison of the expected frequency distribution of the sums of groups of six digits, taken vertically, with the actual numbers of times the various sums actually occurred, using the Chi-square Test. The possible sums range from zero to fifty-four, inclusive.

To get actual, the sum of each vertical group of six digits was computed, and a tally sheet prepared for each page, as before. The expectations for each possible sum were computed by the method suggested by Yule; i.e., placing the expectation of one-digit sums across the columns of a work sheet and as stubs on its ten rows, computing all cross-products for each row-column cell, and summing upward on the diagonals from left to right to obtain the expectation of two-digit sums (ranging from zero to eighteen). The latter may then be entered as stubs on a second work-sheet, with the former as column captions again, and the cross-products and sums on the diagonals computed, to obtain the expectations for three-digit sums, etc. Eventually, the six-digit sums' expectations will be so obtained.

Classes were combined for this test as follows: 0-17, 18-20, 21-22, 23-24, 25-26, 27, 28-29, 30-31, 32-33, 34-36, 37-54. In this way, classes were given approximately equal expectations, except for the middle class, for which the expectation was about one-half that of the other classes. Lumping of the classes in this way, with approximately equal expectations, improves the accuracy of the Chi-square computations, even though it reduces the number of degrees of freedom to ten.

Results of this third test, by pages, were as

follows:

Page	Chi-square	Probability
1	9.355	.499
2	13.283	.210
3	15.180	.132
4	9.147	.519
5	8.106	.619
6	6.683	.754
7	7.548	.673
8	15.548	.117
9	4.989	.891
10	14.045	.176
11	8.582	.573
12	6.583	.763
13	16.031	.099
14	5.180	.876
15	11.965	.289
16	7.904	.639
17	5.002	.890
18	9.136	.520
19	15.631	.114
20	9.781	.414

The test for the twenty pages combined resulted in a Chi-square of 8.246, whose probability is approximately .606.

Thus, one may safely conclude that each page could easily be the result of a chance sampling procedure. The same is true of the whole set of twenty pages combined. There were no Chi-square values below .050, such that they could not have happened by chance; i.e., such that the discrepancy between actual and expectation is so great as to be significantly unlikely. Neither were there any suspicious runs, nor any page with a probability above .950, which might be considered as exceptional (and so, unlikely) concordance of actual and expectation.

It follows that this test of the randomness of the

digits, taken vertically column by column, is entirely satisfactory in its results. No restrictions on the randomness of samplings so obtained; i.e., where sample member numbers are procured by using the columns of the table, are indicated.

CONCLUSION

The first test has demonstrated that approximately equal distribution of the digits is assured. Only page two had too great a discrepancy between actual and theoretical, while only page eleven demonstrated exceptionally high concordance thereof. Both of these results exactly meet expectation, since such results should occur by chance one time in twenty and here did so. There is nothing unusual in this. Like page eleven, the set of twenty pages demonstrated an exceptionally high concordance of actual and expectation; this is favorable rather than the reverse, as it proves the combined set of pages has greater than random result equality of distribution of the digits, so that random sampling based thereon is improved, not harmed thereby.

The second test, based on horizontal group ranges, showed no pages with a discrepancy between expectation and actual so great as to be significantly unlikely, while only page twelve was exceptionally unlikely with respect to the concordance of the two. The latter is not unusual in that it might be expected, as a result of chance, one time in twenty, which here occurred exactly. Use of the tables by taking the digits across the rows is, however, not similarly validated for the whole set of twenty pages, so that large samplings involving the use of all pages of the table should secure their digits vertically down the columns.

That this is permissible is demonstrated by the results of the third test, based on vertical groups' sums of six digits. No unusual, non-random results were obtained for this test. Hence, no restrictions on the use of the random digits by columns are indicated.

The general conclusion drawn, therefore, is that these 30,240 digits constitute a random set, capable of being used for the obtaining of random samples from finite, existent universes. Page two, though random according to the second and third tests, may well not be used for small samplings using only a single page of digits, while the combined range test results indicate that use of the digits by columns is preferable to their use by rows, for large samplings.

III. Use of Random Number Tables by Business Men

Random number tables may be used for any sampling from a finite, existent universe. A finite universe is one capable of being numbered from one up to the largest number required.

The first step in the use of the tables for random sampling is to pre-number the universe. The second step is to open the table at random, dropping the pencil point, without looking, somewhere on the page. The first and second digits so located, reading from left to right, will be the page number of the table to be used. The third digit will be the column number, and the fourth digit will be the block number. The third step is the obtaining of random numbers of the required number of digits, which will be the number in the largest number of the universe, according to some systematic, pre-determined selection scheme. In so doing, numbers obtained more than once are omitted, or skipped, after the first time. Numbers larger than the largest number in the pre-numbered universe, when obtained, are also skipped.

FIRST EXAMPLE

Suppose that a certain dairy in Waco, Texas, has 5,000 home delivery customers for milk, and that it wishes to determine consumer preference for this group as to delivery of milk in glass quart bottles or in paper cartons. Suppose also that re-use of the glass bottles makes their use one cent cheaper per quart than is possible if paper cartons are used.

It has been decided that interviewing of all five thousand customers would be too costly and too time consuming, and so sampling of five hundred customers, selected at random, has been decided upon. To obtain this random sample, number the universe from 0000 to 4999. Then open the random number table at random, and pick a starting page, column and block in the manner stipulated above. The pre-determined scheme for selection of the necessary four-digit numbers would then be followed. This might consist of starting horizontally from the upper left-hand corner of the block and column selected, taking the first four digits as the first random number. If this falls in the universe range (0000 to 4999), it will be recorded as the first member of the sample. The second number, according to the selection scheme, might be the third, fourth, fifth, and sixth digits. Again, if within the universe number range, this would be recorded as the second member of the sample. This method of selection of sample members from universe member numbers might be continued indefinitely; certainly until the required five hundred numbers have been obtained. The third number would be the fifth, sixth, seventh, and eighth numbers, going from left to right from the starting point. The fourth number would start two more digits to the right, etc. When the end of the row was reached exactly, drop the first two digits of its last number, as usual, and add the first two digits from the left end of the next row. Thus, there would be no break between rows. Repeated numbers would not be used after the first time they were obtained.

When the numbers of five hundred different universe members (customers) have been so obtained, they constitute a random sample. Those customers may then be interviewed, in order, and their preference obtained. Their collective judgment will be approximately the universe judgment on the issue if the sample is also adequate in size and representative. In the latter connection, it may be noted that Waco has a glass factory, but no paper mills. Hence, the final sample used as a basis for estimating the universe judgment should include, in this case, exactly the percentage of glass workers to all workers as

prevails for the city at large.

SECOND EXAMPLE

Suppose some milk consumer wrote a letter to the local newspaper raising the issue of paper cartons versus quart bottles of glass for the sale of milk, and suppose further that this letter started a controversy carried on so briskly by letters to the editor that he decided to conduct a consumer preference survey to settle the issue. It was readily determinable that paper cartons would cost one cent more per quart and that deposits on bottles at stores would be eliminated.

The editor realized the impracticability of inquiring the preference of every consumer in the city, and so he decided to obtain a random area sample, using a random number table twice. The first step was to get a map of the city, and, determining that there were exactly a thousand blocks, to number the blocks from 000 to 999 inclusive. The random number table was then opened at random, and the starting point determined as suggested above to be page six, block two, column two. It was decided in advance that the direction to be followed would be on the diagonal from the lower right-hand corner of the starting block, downward and to the left, then from the left edge of the page downward and to the right on the diagonal, then from the bottom of the page upward and to the right on the diagonal, then from the right-hand edge upward and to the left on the diagonal, and, finally, if necessary to select a new starting point at random, repeating this procedure on the new page. In carrying out this procedure, three digit numbers were to be taken, and to be used the first time obtained when within the universe range of numbers. Each three digit number was to start where the preceding number left off. In this manner, two hundred blocks were to be selected at random.

The next step was to pre-number the houses in each block, which in no case exceeded the range 00 to 40. Again, a starting page, block, and column were selected at random. It was pre-determined that the

starting point would be the second digit from the left end of the lowest line on the block, and that the direction of advance would be vertical to the top of the page, then horizontal for six digits, then vertical to the bottom of the page, etc. Two-digit numbers were to be obtained, each beginning where the prior number left off, and each used if within the 00 to 40 range, the first time it occurred. Such numbers were to be obtained in sequence for the separate blocks beginning with the last block number obtained and working back toward the first block number obtained. Three numbers in each block were to be obtained, so that the total sample would be six hundred persons.

After getting the six hundred persons to be interviewed, reporters visited them and obtained their preferences, the results being tabulated and printed in the daily paper as the collective judgment of milk consumers in the city.

THIRD EXAMPLE

Suppose that a factory manufactures steel shafts purchased by others and inserted into hollow cylinders. It follows that the shaft diameter must be closely controlled. The manufacturer has been having trouble controlling this dimension, and so, hearing of statistical quality control, decides to try it. Duly hired, the statistician decides to convince the executives, foremen, and selected key workmen of the facts of the normal curve, i.e., of the fact specifically that means of samples drawn from a normal (hence, controlled) universe would themselves be normally distributed. If he can sell this point, he will have them sold on the quality control program, because it is then clear that small sample means, taken hourly, will fall within control limits placed at plus and minus three standard errors of the mean on either side of the process mean performance line, if the process remains controlled. Clearly also, in such case, a sample mean outside the control limits denotes lack of control since it is a significantly unlikely event in a controlled process, the probability of its occurrence by chance being about one in 385. Thus,

trouble is spotted immediately so that the situation can be corrected promptly by the foreman and the plant engineer. In this way a better control over quality is maintained and more shafts fit into the cylinders than previously. If it should develop that this manufacturer already is producing under controlled conditions, he then has proof that it is the inside diameter of the purchaser's cylinders that is not under control. The purchaser can then work to bring his process under control, so that good fits will be obtained.

The statistician, to accomplish these ends, will pre-number a group of numbers running, say, from thirty to sixty, with each number occuring sufficient times to give the resulting distribution normalcy. That is, its curve will look like a normal distribution curve, the number of frequencies on each number having been determined by normal curve distribution theory. All the numbers can be listed in sequence from smallest to largest and numbered as successive items from 000 to 999 if he uses one thousand numbers.

The statistician then shows these numbers and their plotted curve to the group and predicts that the means of two hundred samples of five withdrawn at random therefrom will themselves be normally distributed about the mean of the original thousand numbers (which is 45). With the assistance of his audience, using the random number table, he proceeds to obtain these samples. A starting point is picked at random, and selection of numbers commences, working from the lower left-hand corner of the selected block. It was decided in advance that the direction of advance would be upward vertically to the top of the page, then downward vertically in the adjacent right-hand column to the bottom of the page, then upward in adjacent right-hand column to the column last used, and so on. Three-digit numbers are to be obtained, each commencing just one digit higher going up, and lower going down, than the preceding number. Repeated numbers are to be skipped. The digits obtained are to be recorded as three-digit numbers in the sequence obtained. Each five such numbers constitutes a sample of five from the normal distribution of pre-numbered numbers. Sample means are then to be computed and their distribution charted.

The results, of course, will turn out as the statistician predicted. The sample means will be normally distributed about the mean of the original numbers, 45, and, as could have been predicted, the standard deviation of these means about their mean (which will also be 45 approximately) is also predictable. Thus, the statistician will make his point.

ADVANTAGE

In each of these three examples, actual use of the random number table is quick, easy, and cheap. Its real advantage, however, lies in its assurance of randomness, of lack of bias, in the samples obtained. A random method of sampling is one for a given universe characteristic which is independent thereof. Such independence must be logically determined and determinable. Use of the random number table for the pre-numbered, finite universe confers this independence automatically for every sampling, because random numbers actually proved to be random are independent of all universe characteristics.

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FIRST 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	345769	953810	627280	423578	353511	899906	827008
	549075	004410	059309	271243	403382	248735	972383
	423480	950812	197145	556566	655917	046169	363201
	554518	514280	950974	482196	058868	474936	724289
	797165	670995	791954	188521	950156	086813	033365
	062730	163375	602168	908350	360861	152201	966097
2	356756	519371	679389	371912	502903	936741	636775
	700770	781547	916968	136999	801855	605975	295802
	279584	733750	487151	116069	274869	416181	610911
	862434	481154	391464	021094	761599	474456	582253
	199585	167701	170778	934765	761328	275799	323046
	048736	514507	977406	158840	846761	198016	933522
3	815218	609732	629295	517386	824505	676788	304971
	643021	527212	492869	261844	914505	354436	355772
	164332	245407	517804	422658	751712	583087	286872
	174303	085157	308590	535846	503131	266915	465641
	136325	414066	452293	649359	844625	674828	953396
	117780	407444	426115	108970	621527	601599	652376
4	435697	245510	946158	934221	824917	509832	362638
	912252	579474	848845	824321	049853	151126	052643
	754438	658573	717914	040054	630638	264060	594641
	322053	924909	048177	957012	801464	833319	978384
	897199	125506	708669	408374	737887	906201	599469
	046637	642050	435779	502427	027842	515775	811203
5	721653	260190	842505	797017	157497	179041	979346
	202312	011976	373248	374293	802292	646914	171322
	354014	356787	511271	904434	068589	329862	829316
	682909	809290	793392	098004	120575	469925	112743
	897690	572456	871574	465543	486529	507767	608677
	139029	160636	417690	191242	625269	104858	020808
6	341447	723998	905614	519309	926345	240082	395043
	415603	129727	894956	780924	227496	134056	023014
	014881	496311	750082	707823	738906	157591	072396
	827235	783798	324650	485324	568156	098331	768720
	261607	730824	341940	259028	253973	145183	658110
	527920	834376	972906	627959	654790	342497	593779

SECOND 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	835431	206253	467521	029822	700399	554652	450184
	512651	743206	118787	587401	921517	015407	206860
	376187	189133	154812	828785	667020	998697	579598
	092530	869028	483691	165063	847894	041617	762973
	238036	016856	290105	538530	079931	412195	838814
	308168	717698	919814	092230	215657	469994	805803
2	773429	915639	900911	276895	149505	540379	224349
	171626	601259	009905	572567	441960	299704	313987
	180570	665625	424048	713009	830314	664642	521021
	558715	965963	494210	875287	488595	898691	713010
	345067	361180	989224	138905	355519	045847	746266
	583819	310956	174728	099164	118461	758000	496302
3	615026	599459	722322	555090	572720	826686	456517
	812358	389535	166779	441968	105639	632418	340890
	784592	003651	279275	055646	341897	510689	026160
	094619	636747	934082	787345	772825	603866	565688
	450908	919891	157771	114333	710179	062848	615156
	593546	728768	984323	290410	970562	906724	315005
4	873778	491131	209695	604075	783895	862911	772026
	965705	317845	169619	921361	315606	990029	745251
	311163	943589	540958	556212	760508	129963	236556
	454554	284761	269019	924179	670780	389869	519229
	124330	819763	596075	064570	495169	030185	866211
	920765	122124	423205	596357	469969	072245	359269
5	183002	540547	312909	389818	464023	768381	377241
	600135	865974	929756	162716	415598	878513	994633
	235787	023117	895285	027055	943962	381112	530492
	953379	655834	283102	836259	437761	391976	940853
	009658	521970	537626	806052	715247	808585	252503
	176570	849057	387097	311529	893745	450267	182626
6	747456	304530	931013	678688	270736	355032	400713
	486876	621985	368395	154273	959983	672523	210456
	987193	268135	867829	025419	301168	409545	131960
	358155	950977	170562	246987	884126	785621	467942
	021394	182615	049084	942153	278313	872709	693590
	735047	428941	630704	893281	716045	267529	427605

THIRD 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	133877	894168	670664	007673	436272	479568	247014
	909935	172305	428979	775425	004071	896108	519806
	204092	380210	589306	421798	273014	842846	750253
	906975	390605	040857	206293	173991	258115	043825
	387430	513087	738318	344565	465609	416995	943451
	045890	563165	460571	633567	481740	951614	668403
2	837159	143979	698357	219259	924875	691935	843585
	796578	982105	540570	724307	369621	562203	757320
	509998	316652	678549	468115	387469	316301	013153
	067045	238296	042458	275413	499300	680274	026351
	207634	540337	350587	013692	412939	274513	984596
	980620	875228	496017	581165	251684	275169	588760
3	347609	157545	919210	690074	532650	922600	693037
	475802	466358	379889	594832	514118	205292	371756
	818821	932102	628457	533138	655279	704197	584316
	362078	838671	765113	410097	138149	701956	928874
	072228	759522	791735	398202	162345	294805	828520
	147935	014193	536872	552021	693458	018447	788748
4	419843	160700	338910	184107	235002	024298	449135
	825546	648481	916364	607857	436970	438087	798960
	082314	418158	781469	991818	721194	358904	450970
	915221	233704	129127	767232	098851	584646	353870
	765613	354681	367568	496453	308935	131432	204643
	036236	196087	690273	453073	595160	410830	466051
5	607104	305543	705229	623194	613727	696054	758402
	308792	376543	027151	165422	560769	814957	589180
	857280	462801	434761	324058	482908	294374	976175
	959721	758687	456782	568719	404563	154205	663418
	207153	231920	518416	804920	932735	082468	322964
	403778	187984	157069	719462	053157	953043	416342
6	286108	108539	428918	149527	723573	636055	737916
	411295	291930	481424	871000	172070	273030	456317
	679313	787369	159935	164716	835268	174221	959886
	405323	376852	057589	437497	357398	838285	098772
	917458	429205	795610	905859	676942	294087	791952
	659514	078457	711589	690730	104700	912369	848269

FOURTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	142582	838531	948535	204547	621651	329695	014694
	097086	190024	666521	170674	144070	124008	702818
	358324	034739	403012	692427	208539	381841	432976
	257091	654023	191287	731088	259167	352640	004388
	928731	264667	956546	240744	769932	574832	914694
	729816	278812	119374	895490	818386	267958	560523
2	781062	721128	169905	290611	024176	160727	856247
	093549	401262	079175	117813	842686	246713	649987
	829708	656390	804223	434596	134518	401187	589048
	550416	658096	352864	576572	178144	051421	836509
	072934	572971	564253	950363	656948	923152	790087
	646941	109528	073147	354187	771592	647850	086352
3	905725	867727	033964	579862	045061	896494	589268
	727696	156430	671765	127312	335860	407661	709388
	742859	985436	487786	403118	684839	561387	985352
	095217	375204	659737	001286	046025	616072	224715
	791020	730765	212021	763149	590401	433554	462302
	824304	754426	728896	070857	137631	634735	426189
4	194358	810596	051443	917458	855114	808348	568628
	364029	285129	651482	180425	166024	465370	467021
	675894	027149	802421	058779	786349	597533	917864
	009913	955754	981235	888191	437609	131287	967580
	605600	593586	200254	365462	154578	179723	358203
	792003	304109	298794	661389	720132	741928	088924
5	357790	028381	163072	758986	302348	248362	909435
	482034	980395	236510	516007	654864	890157	740017
	319302	713745	057612	027685	180265	981029	237304
	622343	241778	137067	061429	489784	439401	438854
	870846	008446	490322	136989	703895	591878	506804
	603242	818115	746069	437465	507246	713641	936584
6	143632	031587	688275	170345	823659	049277	970129
	954182	040683	787002	775349	571341	854167	020533
	283056	857426	252542	404561	546734	822595	481604
	891730	027420	126799	821731	195465	709433	240637
	497562	204798	343671	124740	855713	016508	282359
	862867	628369	179980	851292	200332	260919	634484

FIFTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	234903	977328	426289	059916	370504	472536	882774
	827916	836545	259741	351195	318902	035302	168872
	072531	890103	176448	541124	205121	123085	068264
	632794	206625	925039	624334	820835	334348	388207
	382872	097936	071964	621400	646309	247900	281703
	808573	394741	959638	247381	610565	709873	334815
2	354309	158909	153881	424752	783022	533624	175172
	906243	726658	251267	365360	579630	586949	158133
	525936	310872	970208	973742	569370	017236	474078
	728432	994758	280372	252475	231276	574619	494115
	133451	621863	348390	098228	347511	147196	784562
	689269	313634	060291	180301	975085	894513	576965
3	724364	808577	482097	323717	715709	476280	826741
	765851	353829	719547	543741	908672	823137	326739
	947243	118331	223157	039177	794272	801545	460983
	465051	280456	629658	126148	156208	857169	911700
	257697	776781	820503	296026	088363	662042	354276
	160987	935231	747978	651684	343587	645322	393694
4	821728	950392	695858	129173	969025	203142	691811
	133820	518328	195320	802857	715239	430737	837670
	676119	543864	713556	608730	542030	267639	272313
	358288	970868	823717	086731	757257	482576	776482
	845316	824309	503518	427637	685270	957076	892133
	942548	198829	493211	149531	094630	027693	329382
5	143233	887181	055337	249805	513691	817352	538149
	458184	837904	923458	391183	608420	216957	172575
	851984	813538	640801	612417	716166	250195	429326
	229237	475843	059797	909582	874102	515272	856061
	174277	763056	492535	469927	796518	647131	871689
	295226	004417	146345	143745	642136	818246	547348
6	517593	113209	334612	395850	971896	012245	572923
	354462	698717	874151	603057	392502	494365	797795
	468647	924887	108659	220318	201989	613680	679493
	684049	465801	098284	331425	284530	486915	763950
	030205	684076	497019	283971	842047	824963	909776
	561626	489302	597504	153984	534636	703728	628141

SIXTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	131002	982802	349586	732144	263958	525852	079077
	311036	948264	757246	999074	473250	301361	287480
	117900	967359	951340	206249	750614	757637	039561
	420108	719403	373353	805621	324985	382658	144203
	817917	014186	490768	918089	827877	872212	083869
	616038	432163	024784	280541	925802	715031	276156
2	028826	878944	125967	203556	380380	530327	766136
	306466	023143	957987	389181	042380	427260	725014
	212582	401308	784251	118122	369778	672765	370624
	904481	259462	613526	296340	417190	492514	683658
	039150	872354	091965	042174	578011	508348	598921
	124093	002854	421698	620839	128047	574933	431906
3	834925	709114	753692	497162	994578	072578	603677
	420841	566312	353244	740576	491964	624527	967488
	254108	159489	952679	167533	521907	193160	031448
	664232	516971	792650	400468	647852	170913	160213
	801813	559026	527213	527566	325794	825990	363411
	395837	431769	701261	078829	386268	265427	791021
4	854672	844120	509813	735713	856045	423249	847869
	713626	401301	541542	792042	627765	708281	990385
	152815	799642	172512	408639	477833	489620	492357
	043842	288755	982207	793857	146365	511024	040649
	621103	658201	406878	049460	736146	544352	951680
	907380	479835	173615	613129	135183	290643	711999
5	183424	225589	588245	751920	670401	465815	707089
	298105	197406	800758	377629	387216	804517	358658
	461943	527038	040083	821392	886273	541711	128572
	972720	500061	802028	649938	152578	108946	530986
	386414	603406	598381	649820	614989	999197	343017
	494412	721901	997552	293068	929691	279002	315891
6	454723	636448	877080	705018	817266	157453	836959
	623403	702369	575734	705190	611039	247033	465424
	375076	190955	175613	953498	527196	205576	322834
	432061	773509	782619	795283	630640	591027	437851
	685739	934795	409662	288493	105881	770890	454989
	474534	628374	913113	927692	876136	484264	370120

SEVENTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	709185	340438	460965	942000	429134	371533	349945
	803284	731331	947821	256570	084028	969352	614616
	613774	169070	625816	991975	931215	403052	246287
	840558	798060	559201	234095	772891	331445	380446
	013254	808899	049165	733968	452613	895842	679503
	183393	890935	491001	295887	522848	409359	015274
2	566494	363359	560313	713965	287916	894109	241842
	292683	864228	833304	918761	233059	183442	875803
	946842	039669	518435	878301	615978	651693	711543
	575525	980274	825670	462213	902406	126143	846392
	240843	754519	584210	651407	182782	817765	960782
	061360	041163	550463	510178	587647	072249	144505
3	851654	517546	483230	028541	136386	893299	538661
	612690	041734	207715	711009	782971	000545	435275
	631361	686831	035875	817705	491952	281547	411735
	124565	390685	177734	180255	932667	048215	962608
	734976	936074	295263	694131	048298	627197	793249
	769343	796105	839915	395087	007383	320656	373892
4	473105	964875	036127	406564	157278	560401	316867
	710915	231828	274369	485163	561230	207294	575026
	684251	094146	619711	251828	512906	312645	878060
	845885	102203	988634	298754	063181	813840	639183
	142951	585206	545267	473025	306256	308372	951465
	769678	251601	274652	427707	075091	948539	086764
5	461383	401090	268780	785630	978687	375917	384056
	730981	428921	742860	534632	393924	005326	864520
	924260	284374	892698	701835	915905	152546	503404
	832534	694104	015167	316561	124648	319627	136572
	080431	863062	566150	287352	095985	339957	697877
	518363	342832	630574	179853	396155	152035	875703
6	812252	414982	006162	592861	532436	487925	892949
	502404	563221	894242	402606	765101	528596	728298
	731967	783719	925607	347223	146852	957104	238921
	417986	204070	595380	562870	621398	174973	497973
	210968	130088	408564	905832	645304	500685	143622
	825692	263029	728499	199860	635831	054995	708355

EIGHTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	231708	504611	968036	591223	211096	777439	724687
	238155	252763	490318	537699	018264	611205	073090
	931326	566249	372390	235417	704547	162374	780520
	096931	857162	342793	866552	120717	346535	914120
	852194	201759	860169	753632	802716	534359	489785
	607691	970406	826115	282337	450421	678673	125376
2	512691	009320	072128	762442	318685	123608	673704
	353452	717059	585926	870062	914621	739670	408454
	420746	200515	694228	153715	636001	137873	425685
	519963	174622	015409	760736	287516	840116	023615
	540173	291088	064135	529330	163618	648945	204881
	421579	960813	843108	619981	051172	203138	880776
3	364778	497155	604345	743963	465583	293902	704439
	871259	627949	619511	713169	643386	815933	006967
	181627	620419	433130	481489	711163	000670	051126
	353905	752314	400977	062539	491624	629837	814535
	657714	902036	245805	732944	809022	127178	800521
	174209	839951	538710	577605	718761	892356	084388
4	725469	413439	902346	165419	490822	390429	499075
	671938	454482	417903	621828	864990	763056	423658
	885010	491779	058320	721145	083903	642452	930942
	226151	515549	670028	511374	761253	268230	009611
	745760	151626	366821	250137	238004	973980	121307
	717283	968736	706421	790072	049558	182425	836501
5	595867	272784	268703	536973	836325	100691	681035
	875626	533691	412573	958910	639313	480796	948218
	625030	856928	206125	378086	936909	163194	066165
	835819	791654	670319	395431	734718	968282	648931
	381220	405003	710916	721794	385418	144613	960278
	628938	749139	238325	787263	175396	941612	116823
6	579020	178087	342515	975848	963673	016366	577259
	485604	168520	649429	618405	738261	716550	051737
	906267	794639	751681	098745	935692	164279	691086
	290971	390334	714535	236290	638512	817957	294169
	005257	486575	021560	713492	147317	892418	382709
	609514	345261	433729	259272	964743	089464	219955

NINTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	703713	961792	361698	921064	359810	205851	420527
	398354	682173	769310	369846	876597	458359	546732
	933574	087050	543032	397201	915752	670849	345033
	078468	643264	662715	900556	901053	272454	813050
	317058	361696	049247	621284	291837	065132	896913
	243540	432075	651304	222857	385195	457927	349056
2	288951	476362	359823	590161	397274	851020	371980
	362424	809383	347200	561475	958729	824860	617283
	379863	204656	409864	041215	739120	367177	732560
	585895	034385	618998	732892	568256	056868	614580
	434176	813547	785450	919789	522335	693796	887172
	374674	901793	106726	895051	084713	793236	381282
3	651648	396038	902658	333511	619928	854278	607033
	260219	974388	614872	964670	049525	035622	187598
	904733	367539	025661	045324	183979	971224	701576
	436192	753780	669391	547199	746967	802521	367585
	946805	477159	222658	357801	987917	498046	233839
	052539	292065	972913	337812	864813	025900	483862
4	673349	965813	137265	265014	249079	868716	195749
	440732	102027	809869	895452	214787	227606	325247
	075531	996371	467848	871687	324409	873376	343864
	594434	875922	872343	140654	634413	885987	250613
	979893	320265	021532	325374	294276	649109	874934
	260885	527132	904898	207021	022025	974681	958791
5	360754	313823	749273	884319	709020	574391	951849
	687710	964818	124558	588430	085500	977040	699126
	373343	616580	539978	773070	125840	656904	804089
	254284	792828	216281	710239	143051	965594	307799
	728182	167249	185108	828931	476238	730451	389757
	527872	482468	988504	312321	400348	251097	089858
6	302663	381793	819596	484546	698217	417590	834351
	721607	084859	223350	332127	087515	345625	265187
	337453	793136	003426	775175	193674	953653	377524
	406261	619372	217905	022483	989559	382698	306041
	027346	780427	974175	021146	204205	549877	997690
	842692	443211	410875	981727	306274	590383	289029

TENTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	784396	928782	898230	491475	787096	319440	527808
	317625	506621	275394	101620	413102	971092	546091
	417023	848764	466908	570442	954468	618408	306431
	654416	936813	122385	085474	053059	749241	103752
	903501	316972	376293	974641	676213	113936	380390
	828497	305193	895132	737121	725616	010540	497355
2	550068	506878	965380	302473	847769	083977	783896
	401879	268036	523268	518462	111693	643668	192035
	968331	943560	683162	450892	940875	932372	149131
	352887	177236	438402	868918	604929	761821	484512
	723572	208626	634913	379304	141015	071418	608013
	856286	436793	349637	639621	707185	913024	243130
3	103320	181527	034334	196828	986568	041437	826726
	211965	673809	839686	278194	802143	191682	860454
	745934	460949	269713	261932	897485	891838	888777
	553538	931626	307797	432254	586823	748828	275036
	110360	412254	381915	548854	369631	476714	414247
	115332	702524	674902	287520	393406	145693	187409
4	659548	601618	960078	684572	359851	538736	125638
	756109	240987	700037	310082	595980	824421	762343
	047981	483419	044824	978889	079853	726057	373189
	316311	821681	405639	523079	439034	127516	534375
	006513	150235	262800	585691	047469	842574	122069
	298814	237268	654241	201009	554759	602010	270358
5	111129	033257	927155	656950	983785	334074	263878
	796146	906825	374921	491726	875754	514015	988104
	491806	621606	814394	616372	798727	135263	510115
	268586	364842	602768	162018	137844	629610	606517
	522869	676089	828018	063396	303935	834250	853405
	941351	807022	043462	435007	404845	193593	489678
6	587489	749061	197434	255164	857809	266389	750610
	343836	341720	326757	349521	262456	942045	836282
	148480	815009	120141	014132	175702	629398	132773
	701271	469684	376702	816468	222500	141391	784950
	227347	643039	690344	271263	434981	294041	517169
	829836	487652	607810	868424	632763	434833	296451

ELEVENTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	318869	096551	075018	173600	814294	591501	627913
	032073	379126	150964	582746	820391	499791	450836
	503594	123796	250179	801867	645724	208460	904589
	752033	146717	507598	013206	062373	174592	485758
	426772	296025	355794	910523	226044	558395	820664
	880385	935199	868276	164745	215331	461823	387590
2	078748	745756	264438	309902	292450	416473	370948
	538797	947574	830131	640608	086318	950933	604015
	425886	292966	017145	527467	556149	052252	163480
	471175	366935	219442	512975	573753	746120	826887
	305253	040311	794567	478211	320792	489983	973112
	686232	591738	183479	401682	032208	051650	715814
3	635598	316998	113236	490270	349488	706552	549690
	031222	658009	913726	242813	021636	165628	785143
	026952	507353	809086	348031	420632	532159	195629
	071863	157848	910323	075630	120653	537068	608516
	412455	729450	721548	209672	240114	858512	919276
	615898	019134	479379	907725	880427	469597	533023
4	959653	867617	975749	182730	412940	505266	821992
	482529	639306	189428	542749	308774	805908	071463
	893147	398746	057375	932176	854560	537907	794206
	291304	402541	349330	222610	933872	085841	488416
	792019	390475	242602	051332	366408	875809	476745
	607867	429879	586706	694090	317493	483283	206959
5	417375	192000	767747	959262	562981	944344	557133
	059826	918866	717172	981466	754390	243676	928913
	096842	902494	415536	270634	831717	185483	208404
	685543	167053	805428	906137	289631	254719	427978
	996096	198613	705234	355989	014851	730684	035168
	929443	701582	953189	587274	519412	740951	218076
6	229676	301716	176624	847129	495967	122240	503530
	154938	884473	071925	546276	819692	270417	896503
	473054	958046	121830	289009	771312	894169	740435
	638259	739820	171484	351906	295880	496042	032762
	546208	257994	852516	024632	578489	281726	348676
	682417	735073	398519	409726	890062	321048	156004

TWELFTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	521891	067828	615407	036740	990423	803075	056897
	462791	246336	413625	868597	474563	310768	993249
	157800	306454	845530	786210	145484	496623	429277
	132172	373951	318452	097963	001922	133768	800046
	787156	836892	005985	826177	927082	234674	507593
	829964	664928	085355	471243	909693	132536	745391
2	239484	701960	020546	956967	583348	019497	989346
	895376	714245	214143	127505	891430	481231	269141
	646097	279872	095081	542277	513994	891866	577531
	564074	236393	242760	850857	981604	194939	358467
	420603	233450	635806	317387	046154	787237	603063
	464728	140928	237140	708409	318442	683516	108304
3	502197	494764	901785	346534	272814	320467	162140
	989273	098967	948193	210275	847129	170607	538691
	158236	547891	203968	534890	976963	979948	039368
	708647	452098	409730	802605	263751	798037	601983
	186584	765879	427813	460303	206398	871694	049525
	611837	121158	350749	424656	942958	706790	213306
4	265780	378461	262354	525729	642499	981040	392701
	521215	846293	654016	881087	132240	314222	739157
	152962	387406	990279	579659	883067	363088	234154
	761467	251343	151383	250533	767490	892038	269643
	614510	568607	326464	498668	083209	200358	064545
	102636	446350	691644	287890	852155	396309	302527
5	478343	544858	863656	777325	190608	523935	291626
	525394	685044	571642	958746	818639	908557	840674
	687939	503542	971567	236737	309941	064507	862803
	225337	302821	849578	924356	719180	560279	747243
	179495	654861	430897	602064	315693	953738	189472
	619480	566866	766150	063651	172751	240838	077542
6	143938	492218	263024	106303	607518	767656	617397
	062409	689553	054027	769065	154670	972186	066891
	674639	701861	495784	150679	269834	217571	860080
	635954	764350	405406	531593	703302	065807	062487
	981739	712741	911998	599502	129069	644330	328726
	610459	406907	471651	416615	054834	983530	732658

THIRTEENTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	617273	835134	722471	126188	675197	820199	723055
	849727	313884	280140	639942	914363	509921	260729
	786295	874921	659892	089204	887261	830434	572357
	197544	909341	890604	803820	483121	879754	021390
	986734	181347	186891	665235	909407	213321	444238
	787847	314183	269965	975109	697076	679515	568113
2	362449	805904	798023	387947	977475	879516	701890
	626425	483279	358105	514514	369427	604788	921943
	246082	193235	557074	482037	209467	452657	977827
	896159	022636	934335	807551	644547	626723	097798
	363635	972317	093379	097208	919685	547678	351218
	964634	207729	550741	446479	875068	358052	396264
3	607535	908676	754874	587213	132168	384595	687780
	903929	881097	512704	329642	404133	839617	054211
	886129	274990	656493	612234	441643	711384	867370
	300227	590368	980974	926558	301549	943638	401711
	887590	583646	815504	699433	875264	701470	312398
	089247	151635	877694	291568	034875	987168	304403
4	663569	146527	309564	819801	258256	510308	465064
	286840	192490	928249	177692	518302	050069	128542
	515934	032859	794214	071367	272036	648957	898049
	412201	292797	696842	346491	450020	548576	952963
	027203	124021	737518	263023	964913	538569	422749
	753481	731518	686149	750926	428133	557371	756306
5	814230	072589	754182	120347	321009	515490	345138
	594126	070544	382476	069856	397659	297056	573089
	977313	385424	221888	895427	146431	730584	302939
	441790	382574	648472	507123	325745	689874	048045
	982383	593763	870669	748831	975338	892213	362219
	421172	508725	899247	959328	641329	089710	156293
6	744630	375296	783768	788094	012904	659635	878084
	561202	035344	294263	509720	148463	494846	832707
	683315	907587	312751	961485	962779	907398	443686
	623533	271760	348799	792608	183546	292864	562583
	355922	158354	183604	640323	897609	079794	754827
	749789	206021	529832	893470	875764	610506	940034

FOURTEENTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	442616	638750	398869	119270	207004	389650	345131
	413586	324809	846407	383005	902088	937998	527517
	354027	586348	619622	026097	331797	108674	354921
	288298	876784	033277	846133	569677	385162	448871
	913637	605825	891461	303023	504896	494230	078735
	102587	198565	027814	969527	905459	280721	991989
2	608619	056635	405474	273377	003688	509277	533194
	518192	099930	931009	635193	212185	154978	547751
	386143	689698	368406	507142	833562	582898	432062
	247046	564627	819935	741289	783702	112434	669657
	402693	244777	591338	246236	667581	424821	236049
	463898	771935	375819	523255	190534	280572	926370
3	695932	129476	320462	181850	567631	831908	080047
	566657	543977	131440	121820	010466	743114	422685
	640541	335339	673008	097680	001297	250909	719136
	315767	460851	779751	532431	147657	407409	296500
	961213	171364	238136	283347	653472	182546	490895
	224504	564213	920948	133476	528751	212744	193628
4	699509	045864	459397	580593	853518	690255	006509
	984736	151042	641204	753979	218499	625693	816087
	545478	958106	254271	887097	806697	758174	639263
	653177	158380	646791	856037	298486	510415	398005
	305719	269695	476563	228921	630012	423248	586760
	771533	702596	087700	846333	291617	952858	044680
5	241945	859326	387130	548500	363452	573640	371744
	248524	386135	070560	543838	655165	478033	808201
	510954	282281	306393	575652	141138	738932	893785
	414371	365939	696075	319927	034076	426449	652154
	501395	455780	175348	616622	928198	685722	742078
	067099	340470	347108	624802	236071	375696	053927
6	310978	381332	054189	807151	035697	986152	682212
	473748	047309	567962	586501	320954	189691	480840
	948780	135635	630490	726688	514796	334854	245650
	286935	940564	519475	996243	866965	147085	253202
	087185	870641	529550	210989	733460	953132	424791
	338580	844817	121916	875944	777334	825446	012870

FIFTEENTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	813047	089530	522419	273838	580491	508400	271726
	589278	117824	983645	049539	756094	151312	374238
	206565	640081	019456	300623	139785	764866	916850
	589203	302356	411198	834540	315239	564576	080109
	166228	087353	193323	306816	202455	697624	545759
	610037	534958	971320	678373	434970	653219	707942
2	116190	243064	006259	297808	292949	804386	511957
	512170	083037	363002	347464	529489	115684	050213
	697976	387942	760258	216593	303603	021401	198027
	626920	839304	928276	168411	174192	981263	921053
	584595	977597	261042	308045	030567	209506	554070
	308988	114530	597848	224016	322305	792657	429065
3	085465	101550	973480	274329	950998	510565	781324
	959073	591249	166379	824962	341587	461698	302174
	637900	840085	168412	338248	252859	287310	121537
	979075	460640	352166	043816	578561	703374	642414
	482507	783286	033505	610404	738802	862510	914827
	557601	253301	963923	513961	960406	088451	183358
4	164010	016149	783596	853070	379954	202387	812754
	364931	250207	814736	298117	865406	853261	619274
	284032	096509	047326	197703	781598	403646	504850
	808246	763173	619980	351070	162153	235369	029714
	962133	816958	281380	619817	704265	781369	467302
	565943	560328	047106	589884	556229	691337	722436
5	751334	187026	857500	292991	360524	486585	681958
	653730	379551	390367	260230	724917	926161	739551
	399344	447892	820353	588025	726676	632515	770270
	827968	696984	051495	978372	009010	676470	991788
	742018	378061	363182	680273	602163	308679	178126
	438798	435682	408181	202019	126977	210144	403149
6	195281	404535	337646	659430	921520	991791	598289
	773738	071272	386560	481125	686950	734253	173082
	698431	479000	915114	729564	173193	919597	760286
	291164	847338	939019	519657	894291	136693	286509
	535307	955479	229338	038791	751506	274148	259276
	535682	471308	235903	855435	754139	220604	296105

SIXTEENTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	907128	190604	041986	473551	384785	832942	217976
	753674	764318	509673	495741	733230	640887	662251
	078742	763516	404996	268930	148524	515138	849327
	118516	637292	908351	327784	816269	423719	496866
	775235	960092	147253	228939	032855	105446	517842
	275022	006683	475138	686598	591294	019760	276906
2	232068	579659	031476	253703	982755	227403	148594
	483596	741620	529289	871452	916535	742065	419712
	849827	493060	712252	875651	479498	130805	439678
	624918	484298	027910	361914	223087	563497	698869
	940013	323944	894305	754785	637689	755481	431902
	607937	404100	643789	989374	644152	825578	176106
3	347195	013775	758650	262187	450829	739351	833954
	169695	091790	732855	269612	956275	171880	129095
	984733	592878	295989	225494	192490	564567	017046
	451904	647808	515823	747424	612054	794101	516846
	232958	750842	735628	475162	250833	968258	622841
	400721	583965	196619	519763	055940	236201	682166
4	107188	979572	336425	270249	481963	866991	825616
	700592	853203	644041	908609	828462	051203	610885
	377569	317686	220423	348345	171902	191475	254816
	527920	357475	391849	005896	610610	281757	600403
	408597	321927	286005	074645	439329	778191	810540
	194058	579821	708710	028126	404369	811505	976798
5	287798	618629	568649	385506	202323	109808	187552
	837421	315059	550450	996731	287165	460333	668504
	489948	212845	652471	985984	572341	573703	048221
	614039	682176	966670	301678	196474	893074	669230
	161702	828967	234143	052284	515310	134403	979467
	878672	075938	160422	470733	686276	238161	828925
6	829279	784087	950891	936470	679583	525718	186932
	546793	382385	931871	211917	717183	394595	739747
	515038	697895	241894	648316	876601	903912	865717
	636125	080010	449316	286080	231876	838279	930471
	302602	356971	281521	424685	607848	430590	325232
	845613	380276	878212	753874	726061	579029	043619

SEVENTEENTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	785208	601306	360162	127485	165827	927567	008935
	971378	339820	687627	646024	012170	739807	698749
	570254	057141	228797	378406	469676	326615	469573
	555976	409892	931425	974376	407324	760904	818703
	696426	614103	173054	267156	320689	657900	121788
	926343	742158	526280	832756	428187	936169	197588
2	732796	261547	909276	587670	380344	948538	681769
	700325	187133	493192	418516	895150	675372	996780
	106238	031825	308287	689616	806218	683654	029519
	597391	245703	969413	759072	101167	648240	968957
	236150	437263	179430	712159	145232	718104	409574
	351781	891306	303252	417457	640979	868487	746745
3	652041	352557	379182	638574	482949	719850	291728
	539785	805430	021924	389094	971843	770918	548056
	079362	753879	634221	504933	194298	651852	568324
	392173	143504	686152	038302	714826	288794	949514
	585239	451897	704257	087629	120901	432458	079861
	041835	626601	084835	924192	480117	797281	916038
4	732419	705815	147938	915620	492106	807612	705015
	770137	943951	686592	248432	629485	150045	841660
	138401	857105	001826	928674	689732	490944	154427
	837793	205005	684088	371517	163856	169901	903299
	330537	027868	548528	694259	915673	041262	325090
	453234	285841	864504	326302	108167	302908	593814
5	674086	565348	381274	943386	413058	517516	124663
	093554	411079	258063	840275	324518	111897	767569
	204214	840801	017295	603922	182171	124377	397835
	650581	814573	100268	842803	623578	395301	069854
	792310	417200	355421	191648	143860	308799	251787
	191160	476350	704604	621778	097532	471937	201513
6	866522	159715	641180	069738	611906	494038	278261
	416250	176742	139614	494038	278261	411676	141250
	742693	410069	589282	934316	805057	976543	406100
	007366	556282	629811	273195	479641	751066	030106
	336618	682584	352673	710578	189490	769152	401549
	031853	112508	469690	600801	352213	983604	765829

EIGHTEENTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	137173	819316	582385	747320	675346	046656	292562
	721284	185734	934642	794362	402965	034149	977740
	850352	182475	735960	200914	374034	202088	956167
	609846	573241	464738	597957	084246	810192	738731
	253170	480469	361834	953723	484928	198062	353159
	714558	563089	871464	287186	224927	050730	705645
2	936583	523255	417467	375941	733096	518056	819806
	911404	728562	032626	759203	283626	246961	817818
	794726	407969	084533	480956	129571	658084	515218
	197362	708968	719495	073393	603400	824936	483539
	502191	192748	273674	754598	580451	356923	624896
	981344	545715	757960	000923	439279	862698	596158
3	324560	455108	136068	694374	326187	632529	709182
	193657	830516	594001	728293	177936	723250	002846
	501229	196628	581304	346171	829097	059763	824513
	880522	174157	495706	934766	035749	153718	426391
	024645	806296	737895	447557	509112	421431	940389
	809419	954236	358442	421974	075839	701726	005146
4	036089	608753	792432	531487	414564	388292	433865
	637220	796539	240298	920406	189497	663953	878416
	917600	234293	566578	401142	948529	320416	104650
	029401	082757	648901	471749	535813	461242	628194
	867577	636025	294068	349868	419520	561134	958008
	047437	849386	790510	178968	962782	089172	879780
5	253163	551543	823046	261404	969355	918074	935989
	510751	388067	410296	074342	497556	665328	471971
	769818	153968	153238	070449	784795	614605	690464
	734906	293861	595618	945812	681479	285725	419701
	091404	863028	912767	499581	235760	430694	290358
	310642	278924	674384	231414	916700	723307	832595
6	487907	854416	275185	835313	092714	157201	729896
	536455	639582	701851	561034	601733	865921	783796
	848915	424783	750341	241682	737583	356078	384521
	412687	864229	390831	002114	763497	176853	956967
	520183	365434	804767	611252	510145	666231	093789
	311894	681846	894351	620211	737573	066723	727608

NINETEENTH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	107567	209953	620478	967613	469027	600535	742048
	574103	102959	631491	911805	249365	243331	057525
	297531	464730	546709	606194	043597	840510	274801
	127287	481433	671970	379190	451872	723561	390847
	405328	845218	696630	357385	160748	052637	908019
	149091	724183	526374	064748	716013	663352	883521
2	655510	410992	674890	069619	531756	781268	096579
	964705	607215	127817	278269	695700	399235	578364
	259783	782345	461819	680037	800153	151838	418127
	759438	160260	204165	269611	289043	260448	503749
	622371	716904	763600	679134	138790	229179	614830
	195272	699139	635890	269379	137984	873064	201927
3	912349	690484	701648	790104	835637	437616	918036
	396791	642784	965826	287159	835460	536598	562387
	536052	405342	593856	605642	479908	754663	063504
	135982	847508	753683	756123	197654	041231	719808
	936817	098148	842752	185679	583296	368926	932160
	042413	504623	597431	719603	417830	769349	475834
4	412432	850027	324143	402314	693725	619217	976196
	038185	291756	740761	895072	485210	445811	659182
	519689	309769	092079	369985	190219	407310	639027
	084976	679123	459670	839625	583092	910531	871320
	089481	230617	246097	159643	765689	154832	725148
	053412	548369	495287	518342	042531	678320	750076
5	971506	450245	393716	452305	468979	525891	824052
	056467	306250	452594	870513	239769	363849	159173
	606982	801336	786904	610872	584127	419781	966586
	796496	030948	161947	212673	412035	985026	238604
	424167	643820	621930	569284	459365	805854	127691
	723920	350105	436893	973264	541867	515489	532679
6	349527	936486	543842	407625	651087	542751	382417
	593748	992453	361589	803674	645860	189257	657482
	761901	493705	905264	654939	370891	962785	257026
	923897	370082	497516	394286	023810	749323	428906
	941280	352068	182693	079208	452170	214635	497908
	608270	465523	126845	358490	897643	365710	134576

TWENTIETH 1,512 RANDOM DIGITS

	A	B	C	D	E	F	G
1	368174	903937	774387	154885	727331	501400	498466
	231353	728033	965626	674349	323410	820167	450356
	388190	132799	697871	488062	883545	582767	079401
	616722	830105	498787	382152	509347	502671	457471
	169088	399721	560563	153492	414782	521427	858393
	168702	539674	086169	647573	185644	694805	128460
2	659178	546577	899946	573979	763210	151022	409776
	320837	168926	055718	039241	051106	026907	879159
	075964	068105	882012	392769	623859	865242	479160
	797533	179040	984618	799067	875457	132854	527307
	482869	469370	741586	353071	906171	210532	839640
	527849	250872	523748	010324	873294	699046	218748
3	306427	747252	300453	850879	563454	879540	501482
	246172	931790	605148	426587	672810	392397	217006
	752813	540305	469742	372981	304140	663734	068116
	734678	250195	013485	439036	956803	643950	777295
	859634	716252	930724	093478	381093	267659	875624
	394787	263906	718470	351782	515723	807062	691255
4	279514	193685	037950	070919	938485	037295	519856
	180287	651840	270817	729406	541415	316637	936740
	318252	691531	004182	348175	135086	460692	731037
	892486	349245	702658	394441	887835	021408	027924
	603025	071637	851812	556278	404847	297589	586974
	087237	874918	143543	281649	359487	340652	581025
5	465729	541206	827495	048301	385720	456379	531946
	086731	257304	820719	698045	264853	261116	697452
	439175	413816	692437	478910	867023	438367	350482
	586419	910308	187468	536987	128635	651429	217645
	642583	465218	307658	832719	690134	803267	589041
	270658	385704	706230	240629	349871	508234	975602
6	165794	516326	901659	493831	175512	852792	049207
	464295	158124	361092	946387	618107	086948	978789
	895609	089214	548472	895291	569473	030827	581579
	767305	867378	422190	314315	712065	687426	930407
	568623	812954	487192	814309	963497	212486	008197
	178545	486350	391571	270803	526890	290005	205625